

## REMARKS

Claims 1-21 are pending in the present application. The Examiner has rejected claims 1-21 in the Office Action Made Final mailed April 22, 2005 ("the Final Rejection").

Applicants respectfully request that the Examiner answer each and every issue raised by Applicants. There are multiple bold headings and each bold heading addresses multiple issues. *Therefore, Applicants respectfully request that the Examiner not answer each bold heading generally, but rather address each of the multiple issues raised in each of the multiple bold headings.*

Applicants again respectfully request that the attorney docket number for the present application be changed from "40886/CAG/B600" to --15258US08--.

### A LIMITER OR MEANS FOR LIMITING AS SET FORTH IN SOME OF THE CLAIMS IN NARDI

Applicants again respectfully request that the Examiner reveal where, in U.S. Patent No. 5,341,110 ("Nardi"), the limiter or means for limiting as set forth in some of the claims. Applicants previously asked in the Response to the Office Action filed December 1, 2003 and the Response to the Office Action filed June 1, 2004 that the Examiner reveal these elements as part of a *prima facie* case of obviousness. Each time the Examiner has failed to tell Applicants where he believes the limiter or means for limiting is in Nardi.

If the Examiner fails to find the limiter or means for limiting as set forth in some of the claims in Nardi, then the Examiner should not have made the last office action final. Instead, the Examiner should have found another alleged reference and issued another non-final office action since the Examiner's analysis was incomplete and incorrect (i.e., the Examiner did not even present a *prima facie* case of obviousness). Surely, the Examiner should not make an office action final if he has failed to even present a *prima facie* case of obviousness.

The Examiner will recall that in the previous office actions, the Examiner has alleged that, although the combination of U.S. Patent No. 5,686,867 ("Sutardja") and Nardi teaches the

limiter or means for limiting as set forth in some of the claims, Sutardja fails to teach a limiter or means for limiting as set forth in some of the claims.

DO NOT JUST FIND A LIMITER OR MEANS FOR LIMITING IN NARDI. If the limiter or means for limiting in Nardi is finally revealed by the Examiner, then Applicants respectfully submit that merely finding a limiter or means for limiting is not enough. The Examiner must find a limiter or means for limiting as set forth in some of the claims. To maintain even a *prima facie* case of obviousness, the Examiner must find each and every element as set forth in Sutardja in view of Nardi.

For example, claim 14 recites, in part, "a limiter coupled between the bandpass filter and the first input of the phase detector". Claim 4 recites, in part, "a limiter to limit the filtered mixed signal from the filter before being applied to the phase detector". Claim 18 recites, in part, "means for limiting the filtered mixed signal from the filter means before being applied to the detector means".

#### **A BANDPASS FILTER AS SET FORTH IN SOME OF THE CLAIMS IN NARDI**

The Examiner asserts that "Nadi [sic] shows in figure 4, a phase detector that provides an error signal to low-frequency path and high-frequency path where the loop filters serve to close low-frequency and high frequency feedback paths. It is considered that loop filters acted as a bandpass filter (see col. 4, lines 39-62; col. 3, lines 46-61).

#### A Bandpass Filter And A Loop Filter

If, as alleged by the Examiner, the loop filter in Nardi is a bandpass filter, then what is the loop filter in Nardi? For example, claim 7 recites, in part, BOTH "a bandpass filter to filter the mixed signal before being applied to the phase detector" AND "a loop filter disposed between the charge pump and the oscillator". How can the same path loop filter 190, 194 be "a bandpass filter to filter the mixed signal before being applied to the phase detector" and "a loop filter disposed between the charge pump and the oscillator"?

Claim 14 recites, in part, BOTH "a bandpass filter coupled to the mixer" AND "a loop filter coupled between the charge pump and the tuning input of the oscillator". How can the

same path loop filter 190, 194 be “a bandpass filter coupled to the mixer” AND “a loop filter coupled between the charge pump and the tuning input of the oscillator”?

Before or After

How can the same path loop filter 190, 194 be “a bandpass filter to filter the mixed signal *before* being applied to the phase detector” and “a loop filter disposed between the charge pump and the oscillator”? If, as alleged by the Examiner, the loop filter in Nardi is a bandpass filter, then it should be noted that the path loop filter 190, 194 is *after* the phase detector 172 in Nardi.

Claim 3 recites, in part, “a bandpass filter to filter the mixed signal *before* being applied to the phase detector”. If, as alleged by the Examiner, the loop filter in Nardi is a bandpass filter, then it should be noted that the loop filter in Nardi is *after* the phase detector 172.

Input or Output

Claim 10 recites, in part, “a bandpass filter coupled between the mixer and the first *input of the phase detector*”. If, as alleged by the Examiner, the loop filter 190, 192 is a bandpass filter, then it should be noted that the loop filter in Nardi is NOT coupled between a mixer and an input of the phase detector. Instead, loop filter 190, 192 is coupled between an *output of a phase detector* 172 and a YIG Resonator 108 or a Phase Modulator 112, respectively.

If the Examiner fails to find the bandpass filter as set forth in some of the claims in Nardi, then the Examiner should not have made the last office action final. Instead, the Examiner should have found another alleged reference and issued another non-final office action since the Examiner's analysis was incomplete and incorrect (i.e., the Examiner did not even present a *prima facie* case of obviousness). Surely, the Examiner should not make an office action final if he has failed to even present a *prima facie* case of obviousness.

**DIRECT AND SPECIFIC EVIDENCE TEACHING AWAY FROM  
THE COMBINATION OF SUTARDJA AND NARDI**

In response to Applicants' arguments that Nardi specifically and directly teaches away from Sutardja, the Examiner's rebuttal is “[h]owever, Nardi shows in figure 3, a phase detector which operates to generate an error signal based on the phase difference between the RF output

signal and a reference signal provided by a reference oscillator. IN addition, the error signal is supplied to a loop filter circuit ...." Final Rejection at page 14.

First, this docs not address Applicants' rebuttal evidence and argument that Nardi specifically and directly teaches away from Sutardja. How much stronger evidence can Applicants bring than a quote from Nardi that specifically and directly teaches away from Sutardja? Applicants respectfully request that the Examiner reconsider the arguments made on page 3 of the Response to Office Action filed June 1, 2004.

Second, by merely stating that Nardi allegedly shows some elements as set forth in the claims, the Examiner has completely confused "teaching" with "disclosing". Even if some elements are allegedly disclosed in Nardi, the issue is whether Nardi teaches those elements. In view of the strong rebuttal evidence and argument that Nardi specifically and directly teaches away from Sutardja, Nardi does not teach the alleged elements and cannot be combined with Sutardja.

After all, if merely alleging elements disclosed in Nardi were enough to overcome significant evidence of that Nardi teaches away from Sutardja, then under no circumstances could a teaching away argument ever overcome an alleged *prima facie* case of obviousness. In other words, by merely allegedly finding some elements of a claim in Nardi, the Examiner has taken the position that such evidence, in and of itself, overcomes any reason for not combining Nardi and Sutardja. Such a high standard cannot be maintained in the face of patent law and practice.

If the Examiner fails to provide compelling evidence that overcomes the direct and specific evidence recited in Nardi that Nardi and Sutardja should not be combined, then the Examiner should not have made the last office action final. Instead, the Examiner should have found another alleged reference and issued another non-final office action since the Examiner's analysis was incomplete and incorrect (i.e., the Examiner did not even present a *prima facie* case of obviousness). Surely, the Examiner should not make an office action final if he has failed to even present a *prima facie* case of obviousness.

## EVIDENCE AND SUPPORTING LOGIC REQUESTED FROM THE EXAMINER

The Examiner states, without support, that the motivation for combining Nardi and Sutardja was “to employ a phase modulator in conjunction with a resonator in order to realize a phase locking oscillator circuit having a loop bandwidth broader than that of existing oscillator circuits.”

Nardi, alone, states that “[i]t is a further object of the present invention to provide a technique by which the loop bandwidth of existing oscillator circuits may be increase without extensive circuit modification”. Nardi at col. 2, lines 32-35.

Nardi explains that

[m]ethods of resonator tuning not relying upon inductive coils (e.g., those using varactor diodes), have tended to degrade phase noise performance by inducing non-linear tuning characteristics or by lowering the oscillator Q.

Nardi at col. 2, lines 9-24. However, Sutardja teaches away from Nardi by not relying upon inductive coils and thus suffers from degraded “phase noise performance by inducing non-linear tuning characteristics or by lowering the oscillator Q.” Such phase noise performance including non-linear tuning characteristics and the lowering of oscillator Q reduces (and not increases) loop bandwidth -- which is the Examiner’s alleged motivation for combining.

Thus, to achieve the Examiner’s motivation “to realize a phase locking oscillator circuit having a loop bandwidth broader than that of existing oscillator circuits”, the Examiner cannot use Sutardja since Sutardja does not rely on inductive coils for resonator tuning. And as Nardi indicated, “[m]ethods of resonator tuning not relying upon inductive coils (e.g., those using varactor diodes), have tended to degrade phase noise performance by inducing non-linear tuning characteristics or by lowering the oscillator Q”. *Therefore, Sutardja not only teaches away from Nardi, but Sutardja teaches away from the alleged motivation provided by the Examiner.*

Applicants respectfully submit that the Examiner provide evidence that rebuts this rebuttal evidence and argument that the Examiner’s motivation for combining is not achieved. Merely stating that Nardi achieves this motivation is insufficient. The Examiner must explain how the modifications specifically required by the Examiner to meet particular claim elements provide “a phase locking oscillator circuit having a loop bandwidth broader than that of existing oscillator circuits” as alleged by the Examiner. In addition, the Examiner is requested to explain

how Nardi and Sutardja can be combined if Sutardja not only teaches away from Nardi, but Sutardja also teaches away from the alleged motivation for combining the alleged references as presented by the Examiner.

If the Examiner fails to provide compelling evidence that the motivation for combining Nardi and Sutardja is supported by each time a particular element is added from Nardi into Sutardja or that Nardi and Sutardja can be properly combined, then the Examiner should not have made the last office action final. If the Examiner must provide a new motivation for combining Nardi and Sutardja, then the Examiner should not have made the last office action final. Any deficiencies cite herein would mean that the Examiner has not presented a *prima facie* case of obviousness. Surely, the Examiner should not make an office action final if he has failed to even present a *prima facie* case of obviousness.


### CONCLUSION

In view of at least the foregoing, it is respectfully submitted that the pending claims 1-21 are in condition for allowance. Should anything remain in order to place the present application in condition for allowance, the Examiner is kindly invited to contact the undersigned at the below-listed telephone number.

Please charge any required fees not paid herewith or credit any overpayment to the Deposit Account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Dated: June 22, 2005

Respectfully submitted,

  
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